

REMARKS

Claims 1-3, 8, 18-20 and 25-36 are currently pending in this application. Claims 1, 8, 18, 25, 26 and 34 have been amended to more particularly point out Applicant's invention. Claims 9-13, 16 and 17 have been canceled. No new matter has been added to this application.

Claim Objections

The Examiner has objected to claim 26 because it contains an unnecessary colon. Applicants have amended claim 26 to withdraw the colon and request that the objection to the claim be withdrawn. The Examiner has also objected to claim 34 because it is duplicative of claim 26. Applicants have amended claim 34 to make it dependent upon independent claim 18 instead of claim 1. Applicants request that the objection to claim 34 be withdrawn.

Rejection of claims 27 and 33 under 35 U.S.C. § 112

The Examiner has rejected claims 27 and 22 under 35 U.S.C. § 112, first paragraph because they contain the recitations "determining the duration of a gesture" and "correlating the duration of the gesture to an intensity and scale in which the command is execute" which the Examiner contends are not found in the specification as originally filed. Applicants respectfully traverse the rejection.

Applicants respectfully submit that the application, as originally filed, does disclose correlating the length or duration of a command to the intensity and scale of the resulting command. On page 10, lines 5-9, if a valid command is detected, the system executes the command as long as the gesture continues. As such, the duration of the command is determined. It goes on to say that the longer a gesture is performed, the larger movement by the virtual endoscope. Again, Applicants submit that the specification discloses that the duration of the command correlates to the scale and intensity of the command (the resulting

degree and type of movement). Applicants request that the rejection of claims 27 and 33 be withdrawn.

The Examiner has rejected claims 1-3, 8, 18-20 and 25-36 under 35 U.S.C. § 112, second paragraph as being indefinite. The Examiner contends that claims 1 and 18 recite the limitation "the trajectory" which lacks antecedent basis. Applicants have amended claims 1 and 18 to provide proper antecedent basis. The Examiner contends that claim 8 contains the limitations "the step of translating the gesture" and "the trajectory" which lack antecedent basis. Applicants have amended claim 8 to provide proper antecedent basis. The Examiner contends that claim 9 includes the limitation "the translation" that lacks antecedent basis. Applicants have amended claim 9 to provide proper antecedent basis.

Rejection of Claims 1-3, 8, 18-20 and 25 under 35 U.S.C. § 102 (e)

The Examiner has rejected claims 1-3, 8, 18-20 and 25 under 35 U.S.C. § 102 (e) as being anticipated by U.S. Patent No. 6,075,895 (Qiao). The Examiner contends that Qiao discloses Applicants' invention as claimed. Applicants respectfully traverse the rejection.

The present invention is directed to a method for automatically remotely issuing commands to a medical imaging workstation. A change in a background of an image from a plurality of images is determined. An object in the image is determined. A gesture is identified according to the trajectory of the object. A determination is made as to whether the gesture corresponds to a valid command. If the gesture corresponds to a valid command, the command is executed resulting in translational and rotational manipulation of a medical device based on the command.

Qiao discloses a method for recognizing a gesture of an image of a player. A portion of a background image is removed and replaced with the player's image which is mapped to a number of templates to generate a number

of template outputs. The template outputs are analyzed to identify pre-defined gestures that correspond to gestures in the image. Qiao is directed to a player of a video game in which a player's movements are replicated by an image of the player that is portrayed on the game display. As such, if the player creates a gesture that emulates kicking or throwing a ball, that gesture is replicated by the player's image.

Applicants submit that Qiao's use of gestures is different than that of the present invention. Applicants' invention is directed to using a gesture to communicate commands to a medical imaging workstation that are to be executed by a medical device such as a virtual endoscope. The present invention detects a gesture and determines if it corresponds to a valid command which is then executed by the device. An example of such a command might be rotation or translation of the virtual endoscope. Unlike Qiao, the action performed by the device is not an exact replication of the detected gesture. In the present invention, the gesture is effectively a shorthand instruction that is received and interpreted by the device. Furthermore Qiao does not teach or disclose a system or method that determines whether a gesture corresponds to a valid command and then instructing a device to execute the command resulting in rotation and translation of the medical device as recited in amended claims 1 and 18. Applicants respectfully submit that Qiao does not teach or disclose Applicants' invention as claimed and request that the rejection of claims 1-3, 8, 18-20 and 25 under 35 U.S.C. § 102 (e) be withdrawn.

Rejection of Claims 9, 10, 13, 16 and 17 under 35 U.S.C. § 103 (a)

Applicants have canceled claims 9, 10, 13, 16 and 17 thereby making these rejections moot.

Rejection of claims 11 and 12 under 35 U.S.C. § 103 (a)

Applicants have canceled claims 11 and 12 thereby making these rejections moot.

Rejection of claims 26 and 34 under 35 U.S.C. § 103 (a)

The Examiner has rejected claims 26 and 34 under 35 U.S.C. § 103 (a) as being unpatentable over Qiao in view of U.S. Patent No. 6,332,038 (Funayama). Applicants respectfully traverse the rejection.

Claims 26 and 34 depend upon amended independent claims 1 and 18 which are directed to a method for automatically remotely issuing commands to a medical imaging workstation. Claims 1 and 18 further recite that if a valid command is recognized, the command is executed resulting in rotational and translational manipulation of a medical device. As discussed above, Qiao does not teach or disclose these limitations.

Funayama disclosed an image processing device that obtains an electronic image and is able to extract a partial image from the original image. Like Qiao, Funayama does not teach or disclose a method for automatically remotely issuing commands to a medical imaging workstation. Nor does Funayama teach or disclose executing a valid command thereby resulting in rotational and translational manipulation of a medical device. Applicants respectfully submit that neither Qiao nor Funayama, whether taken alone or in combination, teach or disclose Applicant's invention as recited in independent claims 1 and 18. Claims 26 and 34 being dependent upon independent claims 1 and 18 respectively, are also not taught or disclosed by the combination of references. Applicants request that the rejection of claims 26 and 34 under 35 U.S.C. § 103 (a) be withdrawn.

Rejection of claims 27 and 33 under 35 U.S.C. § 103 (a)

The Examiner has rejected claims 27 and 33 under 35 U.S.C. § 103 (a) as being unpatentable over Qiao in view of U.S. Patent No. 5,875,257 (Marrin). Applicants respectfully traverse the rejection.

Claims 27 and 33 depend upon amended independent claim 1 which is directed to a method for automatically remotely issuing commands to a medical imaging workstation. Claim 1 further recites that if a valid command is recognized, the command is executed resulting in rotational and translational manipulation of a medical device. As discussed above, Qiao does not teach or disclose these limitations.

Marrin discloses an apparatus for continuous sensing of hand and arm gestures. The sensed parameters are transduced into electrical signals indicative of the parameter quantities. The signals are used to control the performance of a musical composition. Like Qiao, Marrin does not teach or disclose a method for automatically remotely issuing commands to a medical imaging workstation. Nor does Marrin teach or disclose executing a valid command thereby resulting in rotational and translational manipulation of a medical device. Applicants respectfully submit that neither Qiao nor Marrin, whether taken alone or in combination, teach or disclose Applicant's invention as recited in independent claim 1. Claims 27 and 33, being dependent upon independent claim 1, are also not taught or disclosed by the combination of references. Applicants request that the rejection of claims 27 and 33 under 35 U.S.C. § 103 (a) be withdrawn.

Rejection of claims 28, 29 and 31 under 35 U.S.C. § 103 (a)

The Examiner has rejected claims 28, 29 and 31 under 35 U.S.C. § 103 (a) as being unpatentable over Qiao in view of U.S. Patent No. 6,252,599 (Natsuko). Applicants respectfully traverse the rejection.

Claims 28, 29 and 31 depend upon amended independent claim 1 which is directed to a method for automatically remotely issuing commands to a medical imaging workstation. Claim 1 further recites that if a valid command is recognized, the command is executed resulting in rotational and translational manipulation of a medical device. As discussed above, Qiao does not teach or disclose these limitations.

Natsuko discloses an image display apparatus for displaying three dimensional endoscopic images. Like Qiao, Natsuko does not teach or disclose a method for automatically remotely issuing commands to a medical imaging workstation. Nor does Natsuko teach or disclose executing a valid command thereby resulting in rotational and translational manipulation of a medical device. Applicants respectfully submit that neither Qiao nor Natsuko, whether taken alone or in combination, teach or disclose Applicant's invention as recited in independent claim 1. Claims 28, 29 and 31, being dependent upon independent claim 1, are also not taught or disclosed by the combination of references. Applicants request that the rejection of claims 28, 29 and 31 under 35 U.S.C. § 103 (a) be withdrawn.

Rejection of claims 30 and 32 under 35 U.S.C. § 103 (a)

The Examiner has rejected claims 30 and 32 under 35 U.S.C. § 103 (a) as being unpatentable over Qiao in view of Natsuko and further in view of U.S. Patent No. 6,501,515 (Iwamura). Applicants respectfully traverse the rejection.

Claims 30 and 32 depend upon amended independent claim 1 which is directed to a method for automatically remotely issuing commands to a medical imaging workstation. Claim 1 further recites that if a valid command is recognized, the command is executed resulting in rotational and translational manipulation of a medical device. As discussed above, neither Qiao nor Natsuko teaches or discloses these limitations.

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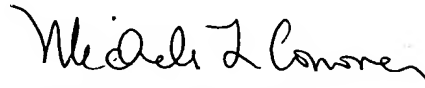
Iwamura discloses an electronic appliance remote controller which includes a display screen for displaying icons representing possible operations of the electronic appliance. Like Qiao and Natsuko, Iwamura does not teach or disclose a method for automatically remotely issuing commands to a medical imaging workstation. Nor does Iwamura teach or disclose executing a valid command thereby resulting in rotational and translational manipulation of a medical device. Applicants respectfully submit that neither Qiao nor Natsuko nor Iwamura, whether taken alone or in combination, teach or disclose Applicant's invention as recited in independent claim 1. Claims 30 and 32, being dependent upon independent claim 1, are also not taught or disclosed by the combination of references. Applicants request that the rejection of claims 30 and 32 under 35 U.S.C. § 103 (a) be withdrawn.

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Conclusion

Applicant respectfully submits that claims 1-3, 8-13, 16-20 and 25-36, as amended, are in condition for allowance and request that a timely Notice of Allowance be issued in this case. The Examiner is invited to contact the undersigned should he have any questions in this matter.

Respectfully submitted,



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